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Virulence in pigs of vPader10 rescued from an infectious cDNA clone of the CSFV strain Paderborn

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The BAC clone, pBeloPader10, contains a complete cDNA of the CSFV strain Paderborn. Virus, named vPader10, was rescued from this construct by electroporation of RNA transcripts into porcine PK15 cells. To further study the characteristics of vPader10, we evaluated the virulence of this virus *in vivo* in pigs. An animal experiment was performed where three pigs were inoculated with vPader10 and housed in-contact with two non-inoculated pigs for 5 weeks. Following inoculation with vPader10, two out of three pigs displayed severe clinical signs of CSF from PID 14 that progressed until death of the pigs at PID 21 and PID 22, respectively. High fever ($>41^{\circ}\text{C}$) was observed in these pigs from PID 14 and remained at a high level until day of death. One of two contact pigs developed similar clinical disease that initiated at PID 21 and progressed until it was euthanised at PID 32 due to severe clinical signs. One inoculated and one in-contact pig showed little or no clinical symptoms. Virus was detected in blood by RT-qPCR from PID 3-4 in all inoculated pigs and from PID 14 in both contact pigs. In the severely diseased pigs the viral loads reached high levels ($\text{Ct} \approx 20$) whereas the two pigs without clinical symptoms displayed transient viral loads that peaked at $\text{Ct} \approx 30$. The results from this experiment demonstrate that vPader10 rescued from pBeloPader10 is virulent and transmissible in pigs.